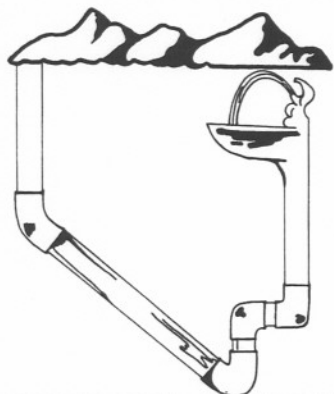


Water Lines



Water Lines is the resource newsletter and calendar of the Nevada Drinking Water and Wastewater Training Coalition.

Volume 13 Summer 2004 Issue

Inside this issue....

Safety first on the job and the exam	2
New Nevada operators	2
Spigot Q&A	3
The surface water treatment rule	3
Planning a cross connection control program	4
Management of onsite wastewater systems	5
RCAC has moved	5
Resource Round-up	5
Training Calendar	6

Special Insert
How a cross connection works!

Rural Community Assistance Corporation funds *Water Lines* through a contract with the Nevada Division of Environmental Protection.

Editor, Abigail Johnson, RCAC

Editor and Production,
Allison Aumock, RCAC

Nevada Rural Water Association operator awards

On behalf of the membership of NvRWA, congratulations on this well-deserved recognition of your professionalism and dedication!

Bob Foerster, Executive Director NvRWA

NvRWA Water System Operator of the Year: Bob Brown

Bob Brown has been with Nye County since 1993, working on a variety of county facilities, including water systems. The Manhattan community water system has 85 metered connections. The full-time population of this former mining town is about 50, and several services go to second/vacation homes. Bob holds a Grade III Water Distribution Operator certificate, and started out with a Grade I certificate from the Associated Boards of Certification (ABC). In addition to Manhattan, he is the certified operator for five nontransient noncommunity systems spread throughout Nye County.

Recently, Bob has worked for needed improvements to the Manhattan system, including a second larger storage reservoir and backup power. Arsenic concentration in the current water supply will not meet the new standard; the hope is that water from the second well will meet



NvRWA Water Operator of the Year, Bob Brown of Manhattan is giving on-the-job training to Jimmy Klapper.

Featured Operator

the standard. Bob is working with management to encourage these needed improvements.

After years with the county, Bob looks forward to retirement. For the last 18 months, he has been giving on-the-job training and mentoring to Jimmy Klapper.

Jimmy has worked alongside Bob two days each week for most of this time, learning from Bob's experience. Bob and Jimmy have also taken advantage of the assistance programs offered by Nevada Rural Water Association to assist with certification studies and resolving technical issues.

(Continued on page 2)

Not just CEUs

By Darrin Price, Advisory Board to the State Board of Health on Certification of Operators of Public Water Systems

Certified operators in the State of Nevada can now obtain continuing education units (CEUs) for attending meetings of the Advisory Board to the State Board of Health on Certification of Operators of Public Water Systems (Operator Certification Advisory Board, for short). This is an opportunity to earn CEUs while participating in meetings that affect you as a water operator.

The Operator Certification Advisory Board welcomes your participa-

tion. Come to the meetings and tell us what your training needs are, how the regulations are affecting your system, and what you would like to see

...THE OPERATOR CERTIFICATION
ADVISORY BOARD WELCOMES YOUR
PARTICIPATION....

changed or improved. You can also just watch to learn more about how regulations and policies are made or changed and how you can shape those changes.

And now, to make attendance even easier, the meetings are being video conferenced from Reno to Las

(Continued on page 3)

Safety first on the job and the exam

By Cameron McKay, Round Hill GID

Did you know that operators who take the water distribution exam most often miss questions about safety?

Water and wastewater operators in Nevada are some of the best trained in the country. Constant hands-on training, video conferences, and training classes available around the state ensure that everyone is up to date on changes in the water and wastewater industries.

SAFETY ZONE

When studying for our exams, we concentrate on math because that usually seems to be the most difficult section of the exam. Without using the formulas regularly, they are soon forgotten and we have to brush up on them to feel comfortable. But safety should not be overlooked either when preparing for the big exam or when on the job.

MAKE SAFETY A PRIORITY AT YOUR UTILITY.

Safety should never be taken for granted in the workplace, and should be at the top of all operators' priorities for daily attention. Make safety a priority at your utility. Weekly safety meetings, tailgate meetings, and open discussions on how a particular project should proceed are necessary to keep the workplace safe for all involved.

Remember, each individual is ultimately responsible for his/her own safety. If you have a problem with unsafe practices, talk to your supervisor, discuss it with everyone involved, and keep the workplace safe.

If you would like more safety training, let the Nevada Training Coalition board members or technical assistance providers know. We want to see you pass your tests, and stay well and out of harm's way.

Operator awards

(Continued from page 1)

NvRWA Wastewater System Operator of the Year: Joe Crim

Since 1989, Joe Crim has been with Lovelock Public Works. He is the Public Works Director, responsible for wastewater collection and treatment, parks, streets, building inspection, and solid waste disposal. Joe currently holds a Grade II Wastewater Treatment Plant Operator certificate and has taken the Grade III exam.

The entire collection system was renovated in the late 1990s, followed

by startup of a new mechanical wastewater plant. Aside from the inconvenience caused by excavation of many streets in town, the system renovation went smoothly. Joe reports that the changeover from lagoons and startup of the 0.6 MGD sequencing batch reactor plant was surprisingly easy. In addition to all his other duties, Joe is now the plant operator. In the future, a sewer line will be extended to a new industrial park.



New Nevada operators certified

These operators passed entry level water certification exams for distribution and treatment grades 1 & 2.

Congratulations !

Distribution grades 1 & 2

Javier Alvarez, Jr. D-1; Michael Austin D-2; Michael Baily D-2; Darel Barlow D-1; Greg Ray Bates D-1; Gerald Bender D-2; Ronald Berg D-1; Blackwelder Gary D-2; Walter Brown D-1; John Bryant D-2; Travis Bunkowski D-1; Kevin Burgess D-1; Chris Buxton D-2; Roy Callahan D-1; Patrick Callahan D-2; Dennis Calton D-1; Patricia Cannon D-1; Terry Capron D-2; Thomas Carrigan A D-2; Robert Chah D-1; Olegario Chavez III D-2; Herbert Clore D-1; Kurt Cooper D-2; Alfonso Cota D-1; Katherine Dietrich D-1; Jamie Doschadis D-2; Jeremy Dumas D-1; Ray Dumar D-2; Tim Elliot D-1; Brian Estep D-1; Mario Fernandez Jr. D-2; Vicky Fortune D-1; Michael Fridy D-2; Curtis Hershel Hafen D-2; Waynes Hallahan D-2; Michael Halliburton D-1; Bill Hauck D-1; Terry Henderson D-2; Andrew Raymond Hutton D-1; Roosevelt Johnson D-1; Dale Johnson D-1; James Klapper D-2; Chad Kreiser D-1; Theodore Krominga D-2; John Lanza D-2; Larry Lecave D-1; Kody Littlefield D-1; Frank Lucchesi D-1; Steven Lujan D-1; Daniel Luong D-1; Demtrius Lynch D-1; Joseph Marquez D-1; Robert Mayers D-1; Kevin McCans D-2; Michael Mcallister D-2; Sandy McFadden D-1; Steve McGoff D-1; Larry Mckenzie D-2; Dana Mckinney D-1; Greg Melandow D-1; Michael Milligan D-2; Eliodoro Moreno D-1; David Musselman D-2; Rick Norcutt D-1; Scott McDonald D-1; Christopher Orton D-1; Patrick Owens D-2; Eric Parks D-1; Carl Patrick D-1; John Payne D-1; James Pezonella D-2; Richard Pickworth D-2; Aldie Pike III D-2; Patrick Quigley D-1; Joel Rand D-1; Eric Rasmussen D-2; Michael Reed D-1; Brett Reed Jr D-2; Paul Robb D-2; John Raymond D-1; Felix Santillan D-1; David Selby D-2; Cheri Senart D-1; Brent Smith D-2; Gordon Smith D-1; Marty Stoner D-2; Chris Struffert D-1; Michael Sullivan D-1; William Summy D-1; Michael Szameitat D-1; Clayton Terry D-1; Dino Tomburello D-2; Chris Torres D-2; Darrin Tuck D-2; Linda Tyler D-1; John Van Syckle D-1; Jesse Williams D-2; Ernest Wungmena D-1; Jesse Young D-1; Mark Baylink D-1; Michael Kasper D-1; Thomas Kubeny D-1; Laurie Lenoble D-1; Harold Madsen D-1; Fred Sheehan D-1.

Treatment grades 1 & 2

Darel Barlow T-2; Gary Blackwelder T-1; Mathew Brower T-1; John Bryant T-2; Travis Bunkowski T-2; Kevin Burgess T-1; John De Vaney T-1; Joe Gibbons T-1; Wendy Gorman T-1; Bill Hauck T-1; Calvin Lang T-1; Steven Lujan T-1; Daniel X Luong T-1; Craig Moyle T-1; Eric J Rasmussen T-2; Jacob Roher T-1; Max Noel Shen T-1; Douglas Sims T-2; Gordon Smith T-1; Chris Struffert T-1; Merlin Twylor T-1; Eric Wert T-2.

The surface water treatment rule

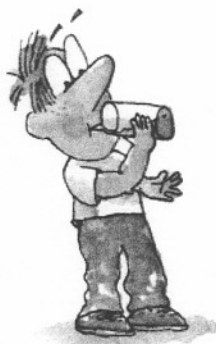
By Stevan Palmer, Rural Community Assistance Corporation

In 1990, the U.S. Environmental Protection Agency implemented the Surface Water Treatment Rule (SWTR) to provide greater protection to the public against water borne diseases from surface water contamination. The SWTR determines if a water system using surface water or ground water under surface water influence must provide an approved method of filtration treatment, and what type of monitoring, record keeping and reporting it must do.

Under the SWTR, water systems are not necessarily required to provide filtration if they meet certain conditions, such as having access to source waters that are low in turbidity and coliform concentration. However, the finished water from these systems must meet the same standards of Giardia and virus removal or inactivation as systems that provide filtration. Minimum levels of disinfectant residuals must also be maintained. If a system fails to meet these standards, it will be required to provide an acceptable type of filtration within a certain time frame.

Systems that provide filtration treatment and those that are exempted are required to monitor turbidity every four hours and monitor residual disinfectant concentration continuously. The systems that do not provide filtration are also required to check coliform density weekly, with the number of samples

and any outbreak of waterborne disease that could possibly be attributed to that system. Systems that do not include filtration are required to provide annual summaries of their watershed control programs, source water quality data, and document any incidences of high turbidity levels or low disinfectant residual concentrations.



In 1998, the Interim Enhanced Surface Water Treatment Rule (IESWTR) was established to provide a higher degree of protection against water borne diseases in water systems serving more than 10,000 people. This revision adds Maximum Contaminant Level Goal (MCLG) of zero for Cryptosporidium and specifies removal requirements for systems that

provide filtration. It strengthens combined filter effluent turbidity performance standards and requires turbidity monitoring for individual filters. It establishes disinfection profiling and benchmarking, includes Cryptosporidium in watershed control requirements for unfiltered public water systems, and subjects systems under the direct influence of groundwater to the

(continued on page 7)

Not just CEUs


(Continued from page 1)

Vegas and Elko. Watch the big screen, smile at the camera, and play a part in helping Nevada improve the training, performance, awareness, and participation of its operators. We need your help!

The rule is: 1 CEU for 10 hours of attendance; ½ CEU for five hours (or one Board meeting).

Go to the Nevada State Health Division, Bureau of Health Protection Services website for more information at: <http://health2k.state.nv.us/bhps/phe/MeetingSchedule.pdf>. Hope to see you there. ♡

The Spigot Q&A

1. Why do intake structures at water treatment plants have screens?
 - A. To slow fast-moving water before it enters the system
 - B. Screens are a regulated security measure
 - C. To catch leaves and debris
2. What would you do if you discovered abrupt (sudden) changes in the source water or filtered water turbidity?
 - A. Shut off the intake valve
 - B. Increase floc and polymer dose
 - C. Decrease contact time
 - D. Review the coagulation floc-culation performance
3. Which method must *not* be used to treat domestic water delivered from water supply reservoirs?
 - A. No treatment
 - B. Disinfection only
 - C. Direct filtration
 - D. Filtration, softening and activated carbon filtration
4. What is the influence of algal blooms on dissolved oxygen?
 - A. Taste and odor is the problem, there is no influence on dissolved oxygen
 - B. Water color is the problem; there is no influence on dissolved oxygen
 - C. Dissolved oxygen becomes too high
 - D. Dissolved oxygen increases and then decreases to very low levels

Source: Thanks to Ken Kerri and his books, *Water Distribution System Operation & Maintenance, 4th Edition* and *Small Water System Operation and Maintenance, 4th Edition* (California State University, 1999) from which this material was assembled.

Crystel Montecinos, Program Development Specialist with the UNR Cooperative Extension, prepares The Spigot. ♡

Answers: 1.C, 2.D, 3.A, 4.D

SMALLER SYSTEMS MUST COMPLY BY JANUARY 2005.

checked determined by the size of the population served; they must also calculate inactivation ratios daily.

Both types of systems are required to prepare monthly reports to the state containing information on turbidity, disinfectant residuals,

Planning a cross connection control program

By Ray Fuller and Kirk Peterson, SPB Utility Services, Inc.

Editor's note: This article is an overview of basic information about a cross connection control program (CCCP). The Insert for this issue of Water Lines is a flow chart and step-by-step description of how to implement a CCCP program, to assist system operators, managers and boards design and implement a program to comply with regulation and protect public health and safety.

The flow chart depicts the administrative protocols essential for every public water system to implement an

**SEVERAL IMPORTANT FACTORS
MUST BE CONSIDERED WHEN
ESTABLISHING AND IMPLEMENT-
ING A CCCP.**

effective CCCP. SPB Utility Services, Inc. developed the five-step protocols as a guide to providing CCCP administrative services to several northern Nevada counties and rural communities. The flow chart illustrates compliance to adopted industry standards and state requirements (NAC445A.67185 - NAC445A.67255) and applies well to both public and privately owned water utilities.

While the Nevada Administrative Codes (NAC) impose specific compliance requirements and content for a CCCP, they do not provide for the effort necessary to develop a program or the consequences for not having an effective program. The NAC requirements are designed to protect the public from backflow hazards introduced into the public water system by accident, negligence or purposely by vandals/terrorist. The burden of this responsibility has been placed upon owner/operators of all public water systems. This burden must be applied with reason and consideration for each customer and the overall economical impact to the community business sector. The motivating force behind the owner/operator of a public water system to respond to

the NACs is clear. Public health and safety is the primary consideration. The public water utility shall be subject to liabilities and penalties along with responsible parties identifiable to a backflow incident for failure to implement and enforce the provisions of the NACs.

Several important factors must be considered when establishing and implementing a CCCP, including:

- ♣ Cost, to both the customers and the utility
- ♣ Financial burden on business sector and implementation protocols
- ♣ Political impact faced by elected officials for imposing a non-funded mandated requirement
- ♣ Liability of public water utility and responsible customer for a backflow event
- ♣ Ordinance content and preparation, legal consulting, public hearing and approval process, implementation and enforcement necessary for the local support of the program
- ♣ Enforcement support by building, licensing and local health authority

The program in a nutshell:

1. Installation of backflow prevention assemblies at the service connection for all customers subject to the NACs. This applies to new customers, and requires the development of a retrofit program for existing customers.
2. Administrative capability to evaluate/determine potential backflow hazards during pre/post activation of water service. This is accomplished by effective water service application forms, onsite survey of customer's facility for potential/actual cross connections and potential plumbing hazards and enforcement of NAC445A.67195 provisions.

3. Establishing communication protocols between other public/private agencies having impact or sharing responsibility for backflow prevention, e.g., building department and business licensing departments, local health agency and adjoining water utilities. Best achieved by mutual agreements, internal policies and procedures, and training.

4. Initial testing of backflow prevention assemblies at time of installation and annually thereafter; a customer responsibility. Requires a cooperative effort between departments of building/safety, licensing and health.

5. Testing of backflow prevention assemblies by a licensed approved AWWA Certified Backflow Prevention Assembly Tester. Best accomplished by requiring pre-registering with the public water utility by AWWA Certified Backflow Prevention Assembly Testers.

6. Record of test compliance. Public water utility responsibility. Requires test due notification and compliance monitoring protocols.

7. Enforcement provisions for non-compliance. Best accomplished with ordinance support and personal customer contact to establish a reasonable compliance date when a potential/actual health hazard is not evident.

8. Educating elected/appointed, officials and the public of the hazards of backflow and benefits to health hazard prevention. Best accomplished by informative mailers, public posting of literature, counter displays at selected public agencies, public hearings and/or board meetings, and web site listings.

For more information about cross connection control program requirements, contact Joe Pollock, Bureau of Health Protection Services, at 775/687-6615. ♣

Management of onsite wastewater systems

By Karen McBride, Rural Community Assistance Corporation

Did you know that 25 percent of the American public use onsite septic systems? Because it is neither practical nor affordable to sewer all of America, exploring options for wastewater treatment and disposal is in the public interest.

Management of onsite wastewater systems is gaining prominence as communities grow, costs of traditional wastewater systems escalate and groundwater quality is threatened.

An onsite system, commonly called a septic system, treats sewage from homes and businesses that are not connected to a centralized wastewater treatment plant. Onsite systems (also referred to as decentralized) include individual onsite septic systems, cluster systems and alternative wastewater treatment systems like constructed wetlands, recirculating sand filters, mound systems and ozone disinfection systems.

Management is the key element of a decentralized system. Previously, the homeowner and businesses were each responsible for their own systems. Decentralized management means using techniques in a systematic way to prolong the life of the septic systems to protect groundwater quality and ensure more efficient operations.

In the 1977 "Response to Congress on Use of Decentralized Wastewater Treatment Systems," Environmental Protection Agency (EPA) determined that the technology available to adequately manage decentralized systems could protect public health and the environment and provide long-term solutions for the nation's wastewater needs. The report also cited five major barriers to increasing the use of decentralized wastewater treatment systems, including the lack of adequate management.

EPA's Guidelines for Management of Onsite Decentralized Wastewater Systems are a set of recommended practices to raise the level of perfor-

mance of onsite/decentralized wastewater treatment system through improved management. Five separate model programs are presented as a progressive series. They are:

- 1) Inventory and maintenance reminders
- 2) Management through maintenance contracts
- 3) Management through operating permits
- 4) Responsible management entity operation and maintenance
- 5) Responsible management entity ownership and management

The guidelines also help states, tribes and communities to develop, modify and implement laws and regulations in areas of onsite/decentralized wastewater treatment system management planning. Each model program includes a set of recommended approaches for planning, siting, design, performance, installation, operation, maintenance and monitoring of wastewater systems.

For these models to succeed, onsite owners should have current information about system operations, and have professional assistance at an affordable cost, and options for sharing the cost of managed onsite systems.

Continuity is an essential element of successful decentralized wastewater management. The model programs provide a basis for community members to decide what elements will work. Involvement of a technical assistance provider can also be helpful to ensure that the public is informed about its onsite management decisions.

See Resource Roundup for related publications.



RESOURCE ROUND-UP

Watershed management: A Policy-Making Primer, Cornell Cooperative Extension. Call 800/624-8301 to order #WW-BLMG12.

Choices for communities: Wastewater Management Options for Rural Areas, North Carolina State University. Call 800/624-8301 to order #WWBLMG09.

eBulletin: A resource for small system decision makers – *The Safe Drinking Water Trust eBulletin* is a free online publication dedicated to providing staff and board members of small rural water utilities with the management tools and regulatory information they need to successfully run their systems. This valuable tool is offered at no cost. To subscribe, go to: www.watertrust.org. eBulletin is produced by the Rural Community Assistance Program.

RCAC has moved!

Rural Community Assistance Corporation (RCAC) has relocated its Nevada office to Reno. The office is located at:

**50 Washington Street
Suite 101
Reno, NV 89503**

Telephone: 775/323-8882
Fax: 775/323-8886

Regional manager John Dailey and environmental specialists Stevan Palmer, Lisa Thayer, and Jean Thompson, along with housing specialist Eileen Piekarz can now be reached at the new Reno location. The office is off West First Street between Arlington and Keystone, near the Truckee River and the McKinley Community building.



Training Calendar 2004-05

July 8—Jackpot—NvRWA Cross Connection Control Programs. 1p.m. - 3p.m.**

July 15—Gardnerville Ranchos—NvRWA Wellhead Protection Plans and Source Water Protection. 9a.m. - Noon.**

July 23—Reno, Las Vegas and rural locations TBA—UNR Videoconference Workshop, Introduction to Disinfection, 9 a.m. - Noon, Info: Crystel Montecinos, 775/784-6853.*

July 27—Gardnerville Ranchos—NvRWA Control Systems Troubleshooting. 8 a.m. - 10a.m.**

July 27—Gardnerville Ranchos—NvRWA Pump Curves/Pump System Efficiencies (tentative) . 10a.m. - Noon.**

August 5—Goldfield—NvRWA Water Certification Review Class. 9a.m. - Noon.**

August 11—Goldfield—NvRWA Water Certification Review Class. 9a.m.-Noon.**

August 19—West Wendover—NvRWA Control Valve Installation, Maintenance and Repair.8a.m.-Noon.**

August 20—Montello—Distribution Certification Preparation. 9 a.m. - Noon.**

August 24—Yerington—NvRWA Advanced Treatment/Distribution . 9 a.m. - 3 p.m.**

August 26—Elko—RCAC Operator Certification Exam Preparation Grade 1 & 2 , Water distribution and treatment. Info: Steve Palmer 775/882-8887.

August 27—Reno, Las Vegas and rural locations TBA—UNR Videoconference Workshop, Monitoring Requirements for Small Systems, Proper Sampling Techniques and Water Characteristics, 9 a.m. - Noon, Info: Crystel Montecinos, 775/784-6853.*

August 31—Beatty—NvRWA Water Certification Review Class. 9 a.m. - Noon.**

August 31—Elko—NvRWA Wastewater Certification Review Grades 1 and 2. Info: Curtis Duff 775/721-7355.

September—Phoenix, AZ—EPA Region 9 Tribal Source Water Assessment Program (SWAP) Training. Info: Eric Byous, e-mail: byous.eric@epa.gov.

September 1—Goldfield—NvRWA Water Certification Review Class. 9a.m. - Noon.**

September 1—Pahrump—NvRWA Wastewater Certification Review Grades 1 and 2. Info: Curtis Duff 775/721-7355.

September 2—Reno/Sparks—NvRWA Wastewater Certification Review Grades 1 and 2. Info: Curtis Duff 775/721-7355.

September 17—Reno, Las Vegas, Elko - Operator Certification Advisory Board, videoconferenced from Reno, 9:30 a.m. (locations to be announced) (Earn .10 CEUs for every hour attended.) Info: Steve Brockway, 775/687-6615, ext. 235.

September 23-25—Primm—20th Annual Tri-State Seminar, training for water and wastewater industry professionals. Info: www.tristateseminar.com.

September 24—Reno, Las Vegas and rural locations TBA—UNR Videoconference Workshop, Exam Preparation, 9 a.m. - Noon. Info: Crystel Montecinos, 775/784-6853.*

October 1—Winnemucca—NvRWA Cross Connection Control Programs and Devices. 9a.m. - Noon.**

October 5—Round Hill—NvRWA Fire Hydrant Installation, Maintenance and Repair. 9 a.m.-11 a.m.**

October 7—Hawthorne—NvRWA Control Valve Installation, Maintenance and Repair. 8 a.m.-Noon**

October 12-15—Sacramento, CA—CA-NV-AWWA Fall Conference. Info: 909/481-7200 or www.ca-nv-awwa.org.

October 20—West Wendover—NvRWA Fire Hydrant Installation, Maintenance and Repair. 9 a.m.-11 a.m.**

October 21—Carlin—NvRWA Fire Hydrant Installation, Maintenance and Repair. 9 a.m.-11 a.m.**

October 22—Reno, Las Vegas and rural locations TBA—UNR Videoconference Workshop, Cross Connection Control, 9 a.m. - Noon, Info: Crystel Montecinos, 775/784-6853.*

October 26—Incline Village—NvRWA Advanced Treatment/Distribution Class. 9 a.m.-4 p.m.**

October 28—Winnemucca—NvRWA Control Systems Troubleshooting. 8 a.m.- 11 a.m.**

October 28—Winnemucca—NvRWA Pump Curves / Pump System Efficiencies (tentative). 10 a.m. - Noon.**

November 4—Beatty—NvRWA Wellhead Protection Plans and Sourcewater Protection. 9 a.m. - Noon.**

November 4—Beatty—NvRWA Solid Waste Management and Groundwater Protection. 1 p.m. - 3 p.m.**

November 9—Stagecoach—NvRWA Water Certification Review Class. 9 a.m. - Noon.**

November 16—Incline Village—NvRWA Advanced Treatment/Distribution Class. 9 a.m. - 4 p.m.**

November 18 or 19—Reno, Las Vegas and rural locations TBA—UNR Videoconference Workshop, TBD, 3 p.m. - 5 p.m. Crystel Montecinos, 775/784-6853.*

Training Calendar 2004-05 continued...

December 1—Beatty—NvRWA Water Certification Review Class. 8 a.m.- Noon**

December 2—Hawthorne—NvRWA Water Sampling, Recordkeeping and Public Notification. 9a.m. - 11 a.m.**

December 8—Gardnerville Ranchos—NvRWA Advanced Treatment/Distribution Class. 9a.m.-3 p.m.**

December 10—Reno, Las Vegas and rural locations TBA—UNR Videoconference Workshop, Exam Preparation, 9a.m.-Noon. Info: Crystel Montecinos, 775/784-6853.*

2005

January 13—Beatty—NvRWA Arsenic- Update and Treatment Technologies. 8 a.m.- 10 a.m.**

January 13—Beatty—NvRWA Radon and Radionuclides. 10 a.m.- Noon.**

January 27—Fernley—NvRWA Treatment Class.

9 a.m. - Noon.**

February 8—Fernley—NvRWA Treatment Class.

9a.m. - Noon.**

February 10—Gardnerville Ranchos—NvRWA Arsenic- Update and Treatment Technologies. 8 a.m. - 10 a.m.**

February 10—Gardnerville Ranchos—NvRWA Radon and Radionuclides. 10 a.m.- Noon.**

February 22—Fernley—NvRWA Treatment Class. 9a.m. - Noon.**

March 7-11—Reno/Sparks—NvRWA Annual Conference. See you there!

**Locations and dates are subject to change; registration is required.*

*** Nevada Rural Water Association — Please pre-register for these FREE classes, so that instructors can supply class materials for all participants. Call 775/783-2225 or fax 775/783-7228.*

♣ This symbol designates training pre-approved by the Nevada State Health Division for continuing education units (CEU) credit. Other training may be eligible for CEUs but is not yet pre-approved. Before attending any training, contact the Health Division at 775/687-6615 ext. 235 for approval. Ten hours of approved training equals 1 CEU. A different ratio applies for safety training. Contact Steve Brockway at 775/687-6615 ext.235 for details.

University of Nevada, Reno
Colleges of Agriculture, Biotechnology, and Natural
Resources & Cooperative Extension

2004 Videoconference Training Calendar

UNR videoconference classes for water system operators and managers are available in most communities. To request a workshop in your area, call Crystel Montecinos at 775/784-6853 or e-mail: xtelle@cabnr.unr.edu.

Community College of Southern Nevada Wastewater & Water Technology Program

Info: LeAnna Risso, 702/434-6600 ext. 6418.

WWET training in Clark County

Info: Gladys Alford, 702/258-3834; see www.wwet.org for a current training calendar.

State of Nevada Water Certification Exams

All exams will be proctored some time during the week of the date listed. Applications are due to the state (Steve Brockway) 30 days before exam dates. A proctor will contact examinees to schedule testing. For 2004, remaining exam dates are Sept. 15 and Dec. 15. Info: Debra Kaye, 775/834-8114.

Wastewater Certification Board testing

Wastewater certification exams are given in March, June, October and December; for locations and information, call 702/433-1498 or go to www.nvwea.org.

The surface water treatment rule

(Continued from page 3)

new rules dealing with *Cryptosporidium*. The IESWTR also requires new water storage facilities to be covered.

The Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) was finalized in January 2002. This rule applies the similar standards of those established by the IESWTR to water systems serving fewer than 10,000 people, extending protection to the remaining 18.5 million Americans served by smaller public water systems. **These smaller systems must comply with all the requirements of LT1ESWTR by January 2005.**

LT1ESWTR also requires that the state must conduct the first round of sanitary surveys, at intervals of not more than every three years for community water systems and every five years for non-community water systems.

The SWTR has been adopted in the Nevada State Administrative Code, Chapter 445A-Water Controls, sections 450-540.

About 14,000 public water systems treat surface water or ground water under the direct influence of surface water. Among Nevada's 613 Public Water Systems, 33 are classified as surface water systems.

For more information, go to www.epa.gov/safewater, or call the Safe Drinking Water Hotline at 800/426-4791.

Nevada Drinking Water and Wastewater Training Coalition

American Water Works Association California/Nevada Section

www.ca-nv-awwa.org

Philip Walsack, Smaller Utilities

Committee Chair, 775/841-3131

Nicole Schreuder, Education Mgr., 909/291-2101

Indian Health Service

Dominic Wolf, 775/784-5327

Nevada Division of Environmental Protection

www.ndep.nv.gov/index.htm

Adele Basham, DWSRF, 775/687-9488

Bill Coughlin, AB 198 Water Grant Program,

775/687-9422

Nevan Kane, Wellhead Protection,

775/687-9426

Nevada Rural Water Association

www.nvrwa.org

888/884-2055

Bob Foerster, Director

John Allred

Jon Anderson

Curtis Duff

David Miller

John Scovil

Nevada State Health Division

www.state.nv.us/health/bhps

775/687-6615

Jim Balderson, SWAP, ext. 228

Steve Brockway, CEU approval, ext. 235

Dana Pennington, ext. 237

Nevada Water Environment Association

www.wef.org

Starlin Jones, 775/861-4104

Eric Leveque, 702-792-3711

Public Utilities Commission of Nevada

www.state.nv.us/puc

Steve McGoff, Utility Engineer, 775/687-6040

Rural Community Assistance Corporation

www.rcac.org

John Dailey, 775/323-8882

Abby Johnson, 775/882-0296

Steve Palmer, 775/323-8882

Lisa Thayer, 775/323-8882

Jean Thompson, 775/323-8882

U.S. Environmental Protection Agency, Region 9

www.epa.gov/region09

Marvin Young, 415/972-3561

USDA-Rural Development

www.usda.gov/rus/water/index.htm

Mike Holm, 775/887-1222, ext. 26

Kay Vernatter, 702/262-9047 ext. 113

University of Nevada, Reno

Dept. of Civil Engineering

Dean Adams, 775/784-1474

Articles in Water Lines may be reprinted with permission from RCAC. Please note that the article originally appeared in Water Lines, the newsletter of the Nevada Drinking Water and Wastewater Training Coalition. For permission, call 916/447-9832 extension 108.

UNR Environmental & Resource Sciences and Nevada Cooperative Extension

www.unce.unr.edu/swp

Crystel Montecinos, 775/784-6853

Mark Walker, 775/784-1938

Water/Wastewater Education and Training Consortium of Southern Nevada — WWET

www.wwet.org

Marie Pollack, Chair, 702/298-3113

Gladys Alford, Registrar, 702/258-3834

NDWWTC Board Members

2003-2005

Bob Foerster, Chair

775/783-7225

nvrwa@pyramid.net

Dean Adams

775/784-1474

vdadams@unr.nevada.edu

Cameron McKay

775/588-2571

rhgid@aol.com

Kirk Peterson

775/329-7757

kcpeterson@gbis.com

Mark Walker

775/784-1938

mwalker@unr.edu



Rural Community Assistance Corporation

3120 Freeboard Drive, Suite 201

West Sacramento, CA 95691

Nonprofit Org.

U.S. Postage

PAID

Permit No. 2418

Sacramento, CA

*****5-DIGIT 89701

ADELE BASHAM

BHPS

1179 FAIRVIEW DR STE 204

CARSON CITY NV 89701-5405



Nevada Drinking Water and Wastewater Training Coalition

Water Lines

Summer 2004



This issue of *Water Lines* is printed on recycled and recyclable paper.



Water Lines Special Insert

User's Guide to the Cross Connection Control Flow Chart

Editor's note: Due to space limits, the flow chart explanation has been abbreviated. To obtain a copy of the full document, contact Kirk Peterson at SPB Utilities: 775/329-7757 or kcpeterson@gbis.com.

Phase One – Adoption of the program

Preparation of the ordinances, by-laws or policy statement: The ordinance is the basis for the entire Cross-Connection Control (CCC) Program. It must comply with state regulations, health and plumbing codes. Details of the Program are to be included in a separate CCC Policy Manual.

Review the proposed ordinance with the system attorney: Must meet the legal requirements of the system. The key decision makers, such as public works directors and managers, should be involved in the review process.

Adoption of the ordinance: The governing body must approve and officially adopt the document which is the basis for your CCC Program.

Phase Two – Preparation, approval and implementation of the plan

Preparation of the CCC policy manual: Tailored for each individual water system, it contains clearly defined details necessary to implement an effective CCC Program, and must conform to the Bureau of Health Protection CCC Plan Checklist. The manual is to be updated as needed, or as conditions change.

Review the CCC Policy Manual with the system attorneys and officials: Key officials must clearly understand and approve each aspect of the manual.

Initial implementation of the plan: Review Policy and Procedures with system personnel. Provide flow charts and procedures for each department that has a hand in implementing the CCC Program, and provide log forms, notification letters, and educational information and an implementation schedule.

Customer notification: Notify all of the system's customers of the implementation of the CCC

Program. Provide customers with a short explanation of the Program and its purpose. Include public educational materials. Mailing to each customer with monthly billing is suggested.

Phase Three– Survey the system

Tracking service connections: Categorize service connections by class of business. An initial investigation of potential hazards will establish a survey priority list, from which to conduct the inspections. Notify businesses by phone and mail to further establish survey requirements.

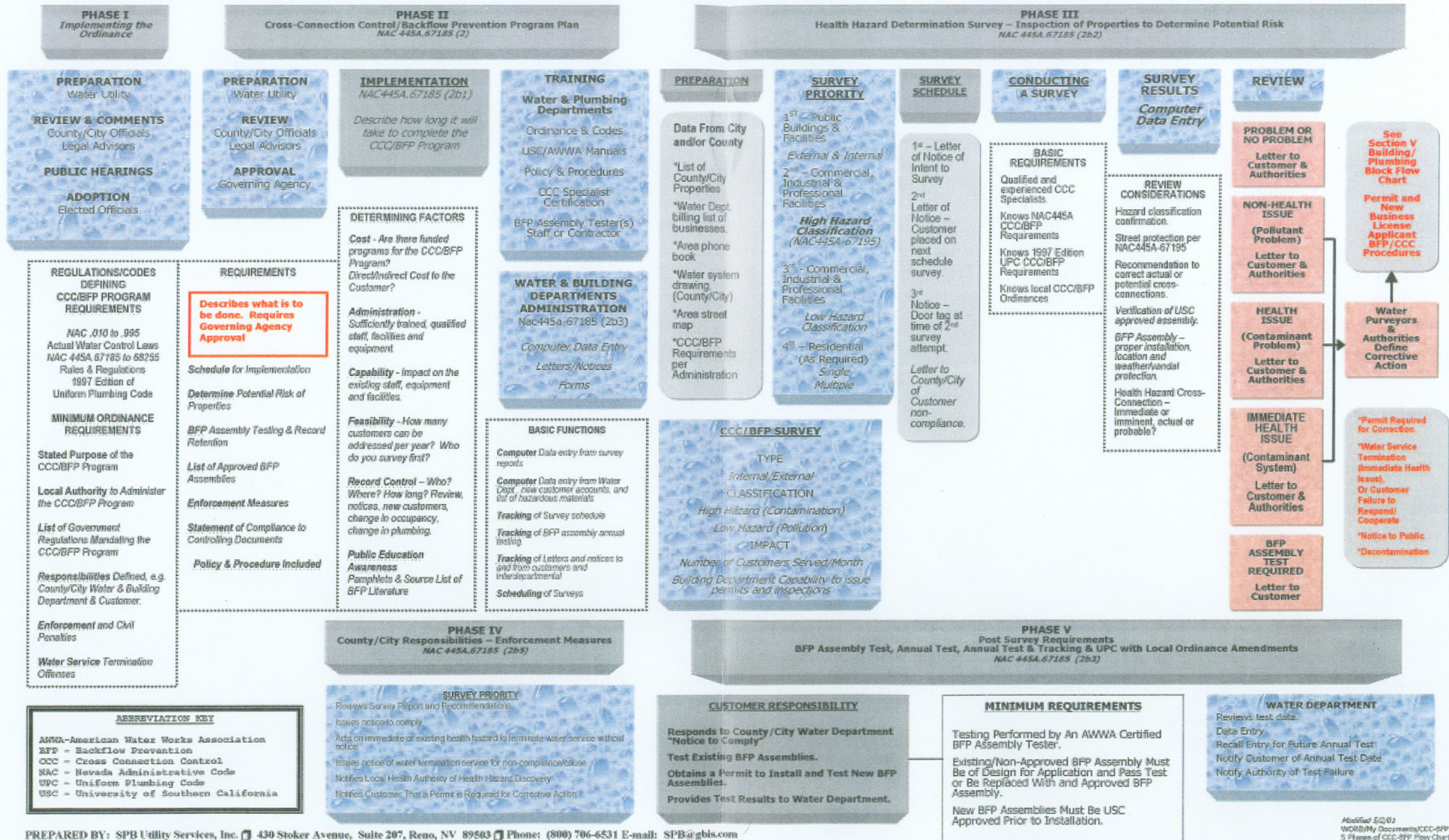
Conducting a survey: A properly conducted survey is imperative to the Program's success. Facilities that are considered high-hazard should be at the top of the survey schedule, which can span many years. Surveys may be conducted by staff or contractor.

Survey scheduling: The system's own facilities should be surveyed prior to conducting the surveys for industrial/commercial establishments. (Well sites, reservoirs, public buildings, system shops and yards, etc.) Coordination between surveyors and facility owners is essential.

Survey inspection of properties: When street protection does not exist, an on-site survey of all commercial/industrial properties must be conducted to determine the degree of hazard. BHPS requires that the public water system be protected from contaminants or pollutants in the event of a back-flow incident (containment survey). Internal protection (isolation survey), which inspects the entire building or property, is required to protect building occupants. Inspectors must be well trained to conduct a thorough inspection, identify hazards and classify cross connections.

Containment survey: Protects the public water system only to the degree that any contaminants or pollutants can be kept out of the water distribution system. Protection can be at the service connection or building interior with BHPS approval.

THE FIVE PHASES OF CROSS-CONNECTION CONTROL AND BACKFLOW PREVENTION



Isolation survey (internal): Not a part of the Program's focus; internal protection is the customer's responsibility.

Commercial properties: Inspections are time consuming because the inspector must look through the facility until the highest hazard cross-connection is identified.

Residential properties: Residential surveys are to be conducted as the least priority. Public education is needed to reduce most dangers for residential service. Home pools, irrigation systems, secondary water systems and pumping systems are of the most concern for protection of the public water system.

Survey Report Generation

Survey inspection reports: Many states require the survey report to be submitted to, and reviewed by state health authority if survey results reflect violations of Cross Connection and/or Backflow Prevention requirements. Nevada does not presently require submittal of the survey report to the health authority.

Types of survey reports

- High Hazard Report (Contaminant); a "health hazard that could cause injury or death"
- Low Hazard Report (Pollutant); a non-health hazard that is unappealing to the senses
- Existing Assembly Report; facilities that were found to be in compliance with current back-flow/cross-connection requirements

Phase Four – Completing the necessary system improvements

Compliance with the corrective action requirements of the survey: First set a schedule and date of compliance. Owner must obtain a building permit, if applicable, for the necessary plumbing modifications. Failure to obtain a building permit by the date specified in the survey notification letter will initiate a first notice of non-compliance. A second notice of non-compliance will be sent within 30 days, to those who fail to respond to the first notice. Regulations require the water surveyor to terminate service to those who do not comply. The system will follow the normal notification procedures for termination. Final inspection approval on issuance of a Certificate of Occupancy, will accompany assembly test results; which are forwarded to the program administrator.

Appealing the results of the survey or changing the dates for compliance: Each survey compliance

notification will include a form that the customer can use to request a review of the survey findings or a change in compliance schedule. Completion of the request form will prompt the system to schedule a meeting with the customer and the appropriate system officials. Temporary corrective measures may be deemed adequate to grant a time extension. Conducting an isolation survey throughout the facility, may aid in allowing a time extension to the schedule.

Phase Five – Testing and tracking of backflow assemblies

Tracking of backflow assemblies: Once compliance with the survey requirements is achieved; all existing and newly installed devices must be tested. Assembly tracking requires specialized computer tracking software, which allows many tasks to be accomplished simultaneously. Tracking forms and notifications letters must be sent to owner/customer certified testers prior to testing devices.

Review of test results and record retention: Each test result must be reviewed and entered into tracking software. The forms must be reviewed to insure that all information is included and properly completed, and that the testers are properly certified and equipment is properly calibrated. Records are to be retained for a minimum of five years.

Failure to test or failed tests: Failure to conduct an assembly test will prompt a notice of non-compliance. A second notification will follow any further non-compliance. Termination of water service is the final step in the process. A failed test result will require repair and retesting of the device(s) within 30 days of the original failed test.

Annual assembly test requirements: Each installed assembly must be tested annually (within 12 months of initial or last test). Device testing must be conducted by an AWWA certified Backflow Prevention Assembly Tester. Each customer with an installed device must be sent a notice and test forms in advance of the anniversary date of the last test.

Non-compliance with assembly testing requirements: Customers that do not respond to the first notice to test their devices will receive a second notice. Generally, it has been found that over half of the annual notifications will need to be followed by a second notice. About 25 percent of those customers with backflow prevention assemblies will have to receive a disconnection notice before they comply. A small percentage will have to have service terminated.⚠